

## Principal quality

Literature review updated August 2013.

As part of WSIPP's research approach to identifying evidence-based programs and policies, WSIPP determines "what works" (and what does not work) to improve outcomes using an approach called meta-analysis. For detail on our methods, see our [Technical Documentation](#). At this time, WSIPP has not yet calculated benefits and costs for this topic.

**Program Description:** Do school principals directly affect student academic outcomes? The studies in this analysis use a "fixed effects" statistical approach to examine variation in principal quality. The studies focus on principals that move from one school to another; impacts on student outcomes can be estimated for different principals in the same school. The effects presented here represent the impact on test scores from a principal who is one standard deviation above average principal effectiveness.

### Meta-Analysis of Program Effects

Outcomes measured	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
			First time ES is estimated			Second time ES is estimated				
			ES	SE	Age	ES	SE	Age	ES	p-value
Test scores	6	2580828	0.107	0.020	11	0.077	0.022	17	0.107	0.001

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

## Citations Used in the Meta-Analysis

- Branch, G.F., Hanushek, E.A., & Rivkin, S.G. (2012). *Estimating the Effect of Leaders on Public Sector Productivity: The Case of School Principals (Working Paper 17803)*. Cambridge, MA: National Bureau of Economic Research.
- Chiang, H., Lipscomb, S., & Gill, B. (2012). *Is school value-added indicative of principal quality? (Working Paper)*. Washington, DC: Mathematica Policy Research.
- Clark, D., Martorell, P., & Rockoff, J. (2009). *School principals and school performance (Working Paper 38)*. National Center for Analysis of Longitudinal Data in Education Research.
- Dhuey, E., & Smith, J. (2012a). *How important are school principals in the production of student achievement?* Retrieved from The Society of Labor Economists website: <http://sole-jole.org/13170.pdf>.
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- Grissom, J.A., Kalogrides, D., & Loeb, S. (2012). *Using student test scores to measure principal performance (Working Paper 18568)*. Cambridge, MA: National Bureau of Economic Research.



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